Remarks

Applicants thank the Examiner for examining the present application and finding that claim 8 contains allowable subject matter. With entry of this amendment, claims 1-31 will remain pending.

Claims 1-7

The Combination of *Sheen*, *Volkov*, and *MacAleese* Does Not Teach All the Elements of Independent Claim 1

The Examiner rejects independent claim 1 as being obvious under 35 U.S.C. § 103(a) over U.S. Patent No. 5,858,609 ("*Sheen*") in view of U.S. Patent No. 6,777,684 ("*Volkov*") in further view of U.S. Patent No. 6,359,582 ("*MacAleese*"). (Office action at pages 2-3.) The Examiner's rejection is traversed.

"To establish *prima facie* obviousness of a claimed invention, all the claimed limitations must be taught or suggested by the prior art." (MPEP 2143.04.) As discussed below, the combination of *Sheen*, *Volkov*, and *MacAleese* fails to teach all the features of claim 1, and claim 1 is properly allowable over the combination of applied references.

Claim 1 recites a method comprising:

> detecting electromagnetic radiation returned from a concealed surface associated with a person, the electromagnetic radiation including one or more frequencies in a range of about 200 MHz to about 1 THz;
>
> establishing data corresponding to intensity of the returned electromagnetic radiation along the surface and depth along the surface; and
>
> adaptively processing the data to determine if a man-made object suspected to be one or more of contraband or a potential security threat is being carried by the person as a function of the intensity along the surface and the depth along the surface.

Sheen describes a method and apparatus for forming a cylindrical image with millimeter wavelength signals. (*Sheen*, col. 1, lines 21-28.) The algorithm for constructing an image from data received by the *Sheen* transceiver is described at column 8, lines 1-61. The algorithm of *Sheen* is used to produce an image from the sampled data $s(\theta, \omega, z)$ and does not involve any processing of data to determine if a man-made object is being carried by the imaged person. In other words, the *Sheen* algorithm constructs an image without making any determination about

the identity of objects in the image. Accordingly, *Sheen* does not teach "adaptively processing the data to determine if a man-made object . . . is being carried by the person as a function of the intensity along the surface and the depth along the surface." Furthermore, and as the Examiner admits, *Sheen* does not teach "adaptively processing" as in claim 1. (Office action at pg. 3.)

Volkov generally concerns a system and method for millimeter and sub-millimeter wavelength imaging. (*Volkov*, col. 1, lines 10-12.) In the first section relied on by the Examiner, *Volkov* describes a technique for minimizing speckle in the imaging of an object by using statistically independent partial images. (*Volkov*, col. 9, lines 56-67; col. 10, lines 1-60.) The partial images described and shown in *Volkov* correspond to intensity distributions of the received radiation and do not concern "data corresponding to . . . depth along the surface" as in claim 1.

In the second section relied on by the Examiner, *Volkov* states that three-dimensional imaging can be realized using a multi-element receiving array which is able to receive multi-frequency wide-band signals from multiple independent directions. In relevant part, *Volkov* states:

> As the speed of s-mmw radiation propagation is known, the time response may be translated into distances along the propagation path up to radiation reflecting obstacles. . . . As a consequence wide-based quasi-optical vector imaging by means of multi-element receiving array allows realizing a three-dimensional image of the observable scene. For contraband detection goals, both the said three-dimensional multi-element imaging system and a single receiver element system may be effectively used.

(*Volkov*, col. 72, lines 12-22.) Although "contraband detection goals" are mentioned, the cited section of *Volkov* merely concerns how a three-dimensional image can be realized from reflected radiation, and does not actually teach or suggest processing data to determine if a man-made object is being carried by a person. Indeed, *Volkov* provides no description or suggestion of how intensity and/or depth data might be processed to determine if a man-made object is being carried by a person. Thus, *Volkov* likewise does not teach or suggest "adaptively processing the data to determine if a man-made object . . . is being carried by the person as a function of the intensity along the surface and the depth along the surface" as in claim 1. Furthermore, and as the Examiner admits, *Volkov* does not teach or suggest "adaptively processing" as in claim 1. (Office action at pg. 3.)

MacAleese also does not teach or suggest the recited features of claim 1. In particular, and as more fully explained below, *MacAleese* teaches a neural network that detects weapons based only on the amplitude of reflected waveforms. Thus, *MacAleese* does not teach or suggest adaptively processing the data to determine if a man-made object is being carried by the person "as a function of the intensity along the surface <u>and the depth along the surface</u>" as in claim 1.

MacAleese describes a system for remotely detecting concealed weapons using radar. (*MacAleese*, col. 1 lines 15-16; col. 1, lines 48-54.) *MacAleese* explains that one or both of two possible methods for detecting a concealed weapon can be used in the *MacAleese* system. "The first method utilizes the specular backscatter from firearms located on the human body. In this method, the backscattered signal is higher in amplitude when a firearm is present. The second method utilizes the self-resonant scattering from the metal parts of the firearms." (*MacAleese*, col. 7, lines 19-25.)

FIGS. 4A and 4B and 6A and 6B illustrate an example. FIG. 4A depicts the time-domain waveform received by the *MacAleese* receiver from a human without a firearm, whereas FIG. 4B depicts the time-domain waveform for a human with a firearm. FIGS. 6A and 6B are the Fourier transforms of the time-domain waveforms of FIGS. 4A and 4B. *MacAleese* explains: "The metallic parts of a firearm resonate at approximately one-half wavelength of the physical dimensions, independnent of the orientation to the incident microwave energy. When a firearm is present, the backscattered waveform has higher frequency content. A comparison of FIGS. 6A and 6B show that a successful discrimination of the presence of firearms can be based upon the presence of the higher frequency content in the backscattered signal." (Col. 7, lines 37-44.)

With respect to the operation of the *MacAleese* neural network, *MacAleese* states: "The frequency-domain data from the receiver (which may be processed by fast Fourier transform) is presented to the input layer of the artificial neural network. The output layer of the artificial neural network drives the processor I/O circuitry which is connected to the light emitting diode display. The artificial neural network is trained to distinguish between the applied patterns at the input layer and then produces the desired response to the output layer." (*MacAleese*, col. 7, lines 45-59.)

More specifically, "[t]he neural net processor of the invention makes a decision as to whether or not a weapon is present by comparing the pattern of signal returns in the band above e.g., 2 GHz to stored patterns. A weapon will tend to resonate in the 2 to 4 GHz frequency band

and create a stronger return than other smaller objects. The criteria is that a signal exists which is greater in amplitude than the background but smaller than a calibrated large radar reflector." (*MacAleese*, col. 10, lines 39-46.)

Accordingly, *MacAleese* teaches a neural network that detects weapons based on amplitude values in reflected waveforms. FIGS. 16 and 17 of *MacAleese* further illustrate that according to the *MacAleese* method, only amplitude values in the reflected waveforms (here, the average of 50 points over 250 MHz at 2.2 GHz) are used by the neural network to determine the presence of a concealed weapon. (*MacAleese*, col. 15, lines 4-6.)

Because *MacAleese* teaches to use only amplitude values to determine the presence of a concealed weapon, *MacAleese* does not teach or suggest "adaptively processing the data to determine if a man-made object suspected to be one or more of contraband or a potential security threat is being carried by the person as a function of the intensity along the surface <u>and the depth along the surface</u>" as in claim 1. In fact, by teaching to use only amplitudes of the returned waveforms, *MacAleese* teaches away from the combination of features recited in claim 1.

Accordingly, the combination of *Sheen*, *Volkov*, and *MacAleese* fails to teach or suggest all the features of claim 1. The Examiner's § 103(a) rejection of independent claim 1 should therefore be withdrawn and such action is respectfully requested.

<u>Dependent Claims 2-7 Are Also Allowable</u>

The Examiner rejects dependent claims 2 and 4-7 as being obvious over *Sheen* in view of *Volkov* in further view of *MacAleese*. (Office action at pgs. 2-3.) The Examiner also rejects claim 3 as being obvious over *Sheen* in view of *Volkov* in further view of *MacAleese* in further view of U.S. Patent Application Publication No. 20020150304 ("*Ockman*"). The Examiner's rejections are all traversed.

Claims 2-7 are dependent on independent claim 1 and are allowable for at least the reasons stated above with respect to claim 1. Further, claims 2-7 are each independently patentable because of the unique and nonobvious features of the combinations set forth in each claim.

Claims 9-16

At the outset, it is noted that with respect to independent claim 9, the Examiner does not recite certain features of the claim, and thus does not expressly identify the portions of the applied references believed to teach the elements of claim 9 as required by 37 C.F.R. § 1.104(c)(2). For example, the Examiner has not identified any portion of the applied references that is alleged to teach or suggest "establishing data representative of a map of intensity of the electromagnetic radiation returned from the interrogation region and a map of depth along the interrogation region." Accordingly, the Office action is not believed to be a proper action on the merits, and any subsequent action should not be final. (*See* MPEP 706.07(a).) Applicants will nonetheless respond to the Examiner's concerns as best as possible.

The Combination of *Sheen*, *Volkov*, and *MacAleese* Does Not Teach All the Elements of Independent Claim 9

The Examiner rejects independent claim 9 as being obvious under 35 U.S.C. § 103(a) over *Sheen* in view of *Volkov* in further view of *MacAleese*. (Office action at pages 2-3.) The Examiner's rejection is traversed.

"To establish *prima facie* obviousness of a claimed invention, all the claimed limitations must be taught or suggested by the prior art." (MPEP 2143.04.) As discussed below, the combination of *Sheen*, *Volkov*, and *MacAleese* fails to teach all the features of claim 9, and claim 9 is properly allowable over the combination of applied references.

Independent claim 9 recites a method comprising:

> irradiating an interrogation region including a person carrying a concealed object;
> detecting electromagnetic radiation returned from the interrogation region in response to said irradiating, the electromagnetic radiation including one or more frequencies in a range of about 200 MHz to about 1 THz;
> establishing data representative of a map of intensity of the electromagnetic radiation returned from the interrogation region and a map of depth along the interrogation region; and
> inputting the data into a neural network to determine if the concealed object is at least one of contraband or a weapon based on the map of intensity and the map of depth.

Sheen describes a method and apparatus for forming a cylindrical image with millimeter wavelength signals. (*Sheen*, col. 1, lines 21-28.) The algorithm for reconstructing an image

from data received by the *Sheen* transceiver is described at column 8, lines 1-61. The algorithm of *Sheen* is used to produce an image from the sampled data $s(\theta, \omega, z)$ but does not involve determining whether a concealed weapon is at least one of contraband or a weapon. Thus, *Sheen* does not teach or suggest "establishing data representative of a map of intensity of the electromagnetic radiation returned from the interrogation region and a map of depth along the interrogation region" and "inputting the data into a neural network to determine if the concealed object is at least one of contraband or a weapon based on the map of intensity and the map of depth" as in claim 9. Furthermore, and as the Examiner admits, *Sheen* does not teach a "neural network" as in claim 9. (Office action at pg. 3.)

Volkov generally concerns a system and method for millimeter and sub-millimeter wavelength imaging. (*Volkov*, col. 1, lines 10-12.) In the first section relied on by the Examiner, *Volkov* describes a technique for minimizing speckle in the imaging of an object by using statistically independent partial images. (*Volkov*, col. 9, lines 56-67; col. 10, lines 1-60.) The partial images described and shown in *Volkov* correspond to intensity distributions of the received radiation and do not concern "data representative of . . . a map of depth along the interrogation region" as in claim 9.

In the second section relied on by the Examiner, *Volkov* states that three-dimensional imaging can be realized using a multi-element receiving array which is able to receive multi-frequency wide-band signals from multiple independent directions. (*Volkov*, col. 71, lines 47-67; col. 72, lines 1-34.) This section of *Volkov*, however, concerns how a three-dimensional image can be realized from reflected radiation, but does not teach or suggest determining if a concealed object is at least one of contraband or a weapon based on the reflected radiation. Indeed, *Volkov* provides no description or suggestion of how a map of intensity and/or a map of depth might be used to determine if a conceal object is at least one of contraband or a weapon. Thus, *Volkov* likewise does not teach "establishing data representative of a map of intensity . . . and a map of depth along the interrogation region" and "inputting the data into a neural network to determine if the concealed object is at least one of contraband or a weapon based on the map of intensity and the map of depth" as in claim 9. Furthermore, and as the Examiner admits, *Volkov* does not teach a "neural network" as in claim 9. (Office action at pg. 3.)

MacAleese describes a system for remotely detecting concealed weapons using radar. (*MacAleese*, col. 1 lines 15-16; col. 1, lines 48-54.) In *MacAleese*, detection of a weapon is based on amplitude values in reflected waveforms. For example, *MacAleese* explains:

> The neural net processor of the invention makes a decision as to whether or not a weapon is present by comparing the pattern of signal returns in the band above e.g., 2 GHz to stored patterns. A weapon will tend to resonate in the 2 to 4 GHz frequency band and create a stronger return than other smaller objects. The criteria is that a signal exists which is greater in amplitude than the background but smaller than a calibrated large radar reflector.

(*MacAleese*, col. 10, lines 39-46.)

Thus, *MacAleese* does not teach "establishing data representative of a map of intensity . . . and <u>a map of depth along the interrogation region</u>" and "inputting the data into a neural network to determine if the concealed object is at least one of contraband or a weapon based on the map of intensity <u>and the map of depth</u>" as recited in claim 9. In fact, by teaching to use only amplitudes of the returned waveforms, *MacAleese* teaches away from the recited feature of claim 9.

Accordingly, the combination of *Sheen*, *Volkov*, and *MacAleese* fails to teach or suggest all the features of claim 9. The Examiner's § 103(a) rejection of independent claim 9 should therefore be withdrawn and such action is respectfully requested.

<u>Dependent Claims 10-16 Are Also Allowable</u>

The Examiner rejects claims 10-16 as being obvious over *Sheen* in view of *Volkov* in further view of *MacAleese*. (Office action at pgs. 5-6.) These rejections are traversed.

Claims 10-16 are dependent on independent claim 9 and are allowable for at least the reasons stated above with respect to claim 9. Further, claims 10-16 are each independently patentable because of the novel and nonobvious features of the combinations set forth in each claim.

<u>Claims 17-24</u>

At the outset, it is noted that with respect to independent claim 17, the Examiner does not recite the claim in the Office action, and thus does not expressly identify the portions of the applied references believed to teach all the elements of claim 17 as required by 37 C.F.R.

§ 1.104(c)(2). For example, the Examiner has not identified any portion of the applied references that is alleged to teach or suggest a "second set of [neural network] inputs being arranged to receive other data corresponding to a map of depth along the surface." Instead, the Examiner recites claim 11 and appears to equate claim 17 with claim 11. Claim 17, however, recites different features than claim 11 and has a different scope. Without more, Applicants cannot determine the basis of the Examiner's rejection. Accordingly, the Office action is not believed to be a proper action on the merits and any subsequent action should not be final. (*See* MPEP 706.07(a).) Applicants will nonetheless respond to the Examiner's concerns as best as possible.

The Combination of *Sheen*, *Volkov*, and *MacAleese* Does Not Teach All the Elements of Independent Claim 17

The Examiner rejects claim 17 under 35 U.S.C. § 103(a) as being obvious over *Sheen* in view of *Volkov* in further view of *MacAleese*. (Office action at pg. 5.) The Examiner's rejection is traversed.

Claim 17 recites a system comprising:

> an array operable to interrogate a person with electromagnetic radiation at one or more frequencies in a range of about 200 MHz to about 1 THz; and
>
> a processing subsystem coupled to the array, the processing subsystem being operable to provide a neural network including a first set of inputs and a second set of inputs, the first set of inputs being arranged to receive data corresponding to a map of returned electromagnetic radiation intensity along a surface beneath clothing of the person, the second set of inputs being arranged to receive other data corresponding to a map of depth along the surface, the neural network being effective to evaluate if one or more objects suspected of being at least one of contraband or a potential security threat as a function of the map of intensity and the map of depth are concealed by the person and provide one or more corresponding outputs.

Sheen describes a method and apparatus for forming a cylindrical image with millimeter wavelength signals. (*Sheen*, col. 1, lines 21-28.) The algorithm for reconstructing an image from data received by the *Sheen* transceiver is described at column 8, lines 1-61. The algorithm of *Sheen* is used to produce an image from the sampled data $s(\theta, \omega, z)$ and does not involve evaluating whether a concealed object is at least one of contraband or a potential security threat.

Thus, *Sheen* does not teach or suggest at least "a neural network including . . . [a] first set of inputs being arranged to receive data corresponding to a map of returned electromagnetic radiation intensity along a surface beneath clothing of the person, [and a] second set of inputs being arranged to receive other data corresponding to a map of depth along the surface" and a "neural network [] effective to evaluate if one or more objects suspected of being at least one of contraband or a potential security threat as a function of the map of intensity and the map of depth are concealed by the person" as in claim 17. Furthermore, and as the Examiner admits, *Sheen* does not teach a "neural network" as in claim 17. (Office action at pg. 3.)

Volkov generally concerns a system and method for millimeter and sub-millimeter wavelength imaging. (*Volkov*, col. 1, lines 10-12.) For example, *Volkov* describes a technique for minimizing speckle in the imaging of an object by using statistically independent partial images. (*Volkov*, col. 9, lines 56-67; col. 10, lines 1-60.) The partial images described and shown in *Volkov* correspond to intensity distributions of the received radiation and do not concern "data corresponding to a map of depth along the surface" as in claim 17.

Volkov also states that three-dimensional imaging can be realized using a multi-element receiving array which is able to receive multi-frequency wide-band signals from multiple independent directions. (*Volkov*, col. 71, lines 47-67; col. 72, lines 1-34.) This section of *Volkov*, however, concerns how a three-dimensional image can be realized from the reflected radiation, but does not teach or suggest evaluating data to determine if one or more objects concealed by a person are at least one of contraband or a potential security threat. Indeed, *Volkov* provides no description or suggestion of how a map of intensity and/or a map of depth might be used to evaluate if one or more objects concealed by a person are at least one of contraband or a potential security threat. Thus, *Volkov* does not teach or suggest at least a "a neural network including . . . [a] first set of inputs being arranged to receive data corresponding to a map of returned electromagnetic radiation intensity along a surface beneath clothing of the person, [and a] second set of inputs being arranged to receive other data corresponding to a map of depth along the surface" and a "neural network [] effective to evaluate if one or more objects suspected of being at least one of contraband or a potential security threat as a function of the map of intensity and the map of depth are concealed by the person" as in claim 17. Furthermore, and as the Examiner admits, *Volkov* does not teach a "neural network" as in claim 17.

MacAleese describes a system for remotely detecting concealed weapons using radar. (*MacAleese*, col. 1 lines 15-16; col. 1, lines 48-54.) In *MacAleese*, detection of a weapon is based on amplitude values in reflected waveforms. For example, *MacAleese* explains:

> The neural net processor of the invention makes a decision as to whether or not a weapon is present by comparing the pattern of signal returns in the band above e.g., 2 GHz to stored patterns. A weapon will tend to resonate in the 2 to 4 GHz frequency band and create a stronger return than other smaller objects. The criteria is that a signal exists which is greater in amplitude than the background but smaller than a calibrated large radar reflector.

(*MacAleese*, col. 10, lines 39-46.)

Because the *MacAleese* neural network operates using just amplitude values, *MacAleese* likewise does not teach "a neural network including . . . [a] first set of inputs being arranged to receive data corresponding to a map of returned electromagnetic radiation intensity along a surface beneath clothing of the person, [and a] second set of inputs being arranged to receive <u>other data corresponding to a map of depth along the surface</u>" or a "neural network [] effective to evaluate if one or more objects suspected of being at least one of contraband or a potential security threat as a function of the map of intensity <u>and the map of depth</u> are concealed by the person" as recited in claim 17. In fact, by teaching to use only amplitudes of the returned waveforms, *MacAleese* teaches away from the recited features of claim 17.

Accordingly, the combination of *Sheen*, *Volkov*, and *MacAleese* fails to teach or suggest all the features of claim 17. The Examiner's § 103(a) rejection of independent claim 17 should therefore be withdrawn and such action is respectfully requested.

<u>Dependent Claims 18-24 Are Also Allowable</u>

The Examiner rejects claims 18-21, 23, and 24 as being obvious over *Sheen* in view of *Volkov* in further view of *MacAleese*. (Office action at pgs. 5-6.) The Examiner also rejects claim 22 as being obvious over *Sheen* in view of *Volkov* in further view of *MacAleese* in further view of U.S. Patent No. 6,057,761 ("*Yukl*"). (Office action at pg. 7.) These rejections are traversed.

Claims 18-24 are dependent on independent claim 17 and are allowable for at least the reasons stated above with respect to claim 17. Further, claims 18-24 are each independently patentable because of the novel and nonobvious combinations of features set forth in each claim.

Claims 25-30

At the outset, it is noted that with respect to independent claim 25, the Examiner does not recite the claim, and thus does not expressly identify the portions of the applied references believed to teach all the elements of claim 25 as required by 37 C.F.R. § 1.104(c)(2). For example, the Examiner has not identified any portion of the applied references that is alleged to teach or suggest "logic being further operable to execute an adaptive process with the data to evaluate if one or more objects suspected of being at least one of contraband or a potential security threat are being concealed by the person as a function of the map of electromagnetic radiation intensity and the map of depth." Instead, the Examiner recites elements of claim 1 and appears to equate claim 25 with claim 1. Claim 25, however, recites different features than claim 1 and has a different scope. Without more, Applicants cannot determine the basis of the Examiner's rejection. Accordingly, the Office action is not believed to be a proper action on the merits, and any subsequent action should not be final. (*See* MPEP 706.07(a).) Applicants will nonetheless respond to the Examiner's concerns as best as possible.

The Combination of *Sheen*, *Volkov*, and *MacAleese* Does Not Teach All the Elements of Independent Claim 25

The Examiner rejects claim 25 under 35 U.S.C. § 103(a) as being obvious over *Sheen* in view of *Volkov* in further view of *MacAleese*. (Office action at pgs. 2-3.) The Examiner's rejection is traversed.

Independent claim 25 recites an apparatus comprising:

> a device carrying logic executable by one or more processors to analyze data corresponding to an image of a person obtained from electromagnetic radiation including one or more frequencies in a range of about 200 MHz to about 1 THz, the data being representative of a map of electromagnetic radiation intensity and a map of depth determined relative to the person, the logic being further operable to execute an adaptive process with the data to evaluate if one or more objects suspected of being at least one of contraband or a potential security threat are being concealed by the person as a function of the map of electromagnetic radiation intensity and the map of depth and provide an output indicating the detection of the one or more objects if indicated by the adaptive process.

Sheen describes a method and apparatus for forming a cylindrical image with millimeter wavelength signals. (*Sheen*, col. 1, lines 21-28.) The algorithm for reconstructing an image from data received by the *Sheen* transceiver is described at column 8, lines 1-61. The algorithm of *Sheen* is used to produce an image from the sampled data $s(\theta, \omega, z)$ and does not involve evaluating whether a concealed object is at least one of contraband or a potential security threat. Thus, *Sheen* does not teach or suggest at least "a device carrying logic . . . to analyze data corresponding to an image of a person . . . , the data being representative of a map of electromagnetic radiation intensity and a map of depth determined relative to the person" and "logic being further operable to execute an adaptive process with the data to evaluate if one or more objects suspected of being at least one of contraband or a potential security threat are being concealed by the person as a function of the map of electromagnetic radiation intensity and the map of depth" as in claim 25. Furthermore, and as the Examiner admits, *Sheen* does not teach an "adaptive process" as in claim 25. (Office action at pg. 3.)

Volkov generally concerns a system and method for millimeter and sub-millimeter wavelength imaging. (*Volkov*, col. 1, lines 10-12.) For example, *Volkov* describes a technique for minimizing speckle in the imaging of an object by using statistically independent partial images. (*Volkov*, col. 9, lines 56-67; col. 10, lines 1-60.) The partial images described and shown in *Volkov* correspond to intensity distributions of the received radiation and do not concern "a map of depth determined relative to the person" as in claim 25.

Volkov also mentions that three-dimensional imaging can be realized using a multi-element receiving array which is able to receive multi-frequency wide-band signals from multiple independent directions. (*Volkov*, col. 71, lines 47-67; col. 72, lines 1-34.) This section of *Volkov*, however, concerns how a three-dimensional image can be realized from the reflected radiation, but does not teach or suggest evaluating data to determine if one or more objects concealed by a person are at least one contraband or a potential security threat. Indeed, *Volkov* provides no description or suggestion of how a map of electromagnetic radiation intensity and/or a map of depth determined relative to a person might be used to evaluate if one or more objects suspected of being at least one of contraband or a potential security threat are concealed by a person. Thus, *Volkov* also does not teach or suggest at least "a device carrying logic . . . to analyze data corresponding to an image of a person . . . , the data being representative of a map of electromagnetic radiation intensity and a map of depth determined relative to the person" and

"logic being further operable to execute an adaptive process with the data to evaluate if one or more objects suspected of being at least one of contraband or a potential security threat are being concealed by the person as a function of the map of electromagnetic radiation intensity and the map of depth" as in claim 25. Furthermore, and as the Examiner admits, *Volkov* does not teach an adaptive process as in claim 25. (Office action at pg. 3.)

MacAleese describes a system for remotely detecting concealed weapons using radar. (*MacAleese*, col. 1 lines 15-16; col. 1, lines 48-54.) In *MacAleese*, detection of a weapon is based solely on amplitude values in reflected waveforms. For example, *MacAleese* explains:

> The neural net processor of the invention makes a decision as to whether or not a weapon is present by comparing the pattern of signal returns in the band above e.g., 2 GHz to stored patterns. A weapon will tend to resonate in the 2 to 4 GHz frequency band and create a stronger return than other smaller objects. The criteria is that a signal exists which is greater in amplitude than the background but smaller than a calibrated large radar reflector.

(*MacAleese*, col. 10, lines 39-46.)

Because the *MacAleese* neural network operates using just amplitude values, *MacAleese* likewise does not teach "a device carrying logic . . . to analyze data corresponding to an image of a person . . . , the data being representative of a map of electromagnetic radiation intensity <u>and a map of depth determined relative to the person</u>" and "logic being further operable to execute an adaptive process with the data to evaluate if one or more objects suspected of being at least one of contraband or a potential security threat are being concealed by the person as a function of the map of electromagnetic radiation intensity <u>and the map of depth</u>" as in independent claim 25. In fact, by teaching to use only amplitudes of the returned waveforms, *MacAleese* teaches away from the recited feature of claim 25.

Accordingly, the combination of *Sheen*, *Volkov*, and *MacAleese* fails to teach or suggest all the features of claim 25. The Examiner's § 103(a) rejection of independent claim 25 should therefore be withdrawn and such action is respectfully requested.

<u>Dependent Claims 26-30 Are Also Allowable</u>

The Examiner rejects claims 26-30 as being obvious over *Sheen* in view of *Volkov* in further view of *MacAleese*. (Office action at pgs. 3, 4, and 6.) These rejections are traversed.

Claims 26-30 are dependent on independent claim 25 and are allowable for at least the reasons stated above with respect to claim 25. Further, claims 26-30 are each independently patentable because of the novel and nonobvious features of the combinations set forth in each claim.

Amended Claim 31 is Allowable Over the Applied References

The Examiner does not recite any grounds for rejecting previously presented independent claim 31. Applicants are amending independent claim 31 to clarify certain features recited therein. None of the applied references, either alone or in combination with one another, teach all of the elements of amended claim 31. Accordingly, amended claim 31 is believed to be in condition for allowance and such action is respectfully requested.

Conclusion

For the reasons recited above, the application is believed to be in condition for allowance and such action is respectfully requested. Should any further issues remain concerning this application, the Examiner is invited to call the undersigned attorney to discuss such matters.

Respectfully submitted,

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